

DRZ SERIES PISTON TYPE POSITIVE DISPLACEMENT FLOWMETER



Flow
Pressure
Level
Temperature
measurement
monitoring
control



- Flow Range 1.6 to 110 GPH
- Accurate Measurements for Lubricating Media
- Economical Brass Construction
- Accuracy $\pm 1\%$ Reading



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Model:
DRZ

Features

- Flow Range 1.6 to 110 GPH
- Accurate Measurements of Lubricating Media
- Economical Brass Construction
- Accuracy $\pm 1\%$ Reading

The KOBOLD DRZ series rotary piston positive displacement flowmeter combines economy with high performance. The DRZ series is designed to measure any clean liquid with lubricating properties and viscosity ranging from 5 to 100 centistoke. The unique design uses a single piston rotating on a camshaft to meter very precise volume of liquid with each rotation of the piston. Piston rotation is detected by a Hall effect sensor. The signal is processed by electronics into a blind pulse output (PNP or NPN based on model ordered) or a full featured controller with flowrate indication, analog output and switches.

An economical brass body is rugged and provides a pressure rating to 580 PSIG. The DRZ has a low pressure drop of 20 PSI maximum.

Use the DRZ with lubricating media such as:

- Lubricating oil
- Diesel fuel
- Glycol mixtures
- Waxes/pastes
- Paint
- Latex polymers
- Sugar solutions
- Detergents

Specifications

Area of Application: Low and medium viscosity liquids which have some lubricating properties

Measuring Range: 1.6-110 GPH

Max. Throughput: 160 GPH

Accuracy: $\pm 1.0\%$ of reading

Repeatability: $\pm 0.2\%$ of reading

Viscosity Range: 5-100 cSt

Process Temp. Range: -4°F to $+176^{\circ}\text{F}$



Ambient Temp. Range: -4°F to $+140^{\circ}\text{F}$

Max. Pressure: 580 PSIG

Max. Differential Pressure: 20 PSI

Wetted Materials: Brass, aluminum, Acetal, Viton

Req. Filtration: 150 mesh or better

Electrical Specifications

Output Type 0000 = OEM NPN Pulse

Power Requirement: 5-24 VDC @10 mA Max.

Output: NPN Open Collector

Max. Output Load: 15 mA

K-factor: 1633 pulses/gal.

Elec. Protection: NEMA 4X/IP65

Elec. Connection: DIN 43650 Plug

Note: May be combined with AUF-4000 to provide LED display with 2-wire 4-20 mA output

AUF-4000 pulse to 4-20 mA converter with display

Power Requirement: 14-30 VDC

Input: Pulse

Output: 4-20 mA, 2-wire

Max. Output Load: 250 ohms

Elec. Protection: NEMA 4X/IP65

Elec. Connection: DIN 43650 Plug

Output Type F300 = PNP Pulse

Power Requirement: 24 VDC $\pm 20\%$ @ 10 mA Max.

Output: PNP Open Collector

Max. Output Load: 25 mA

K-factor: 1633 pulses/gal.

Elec. Protection: NEMA 4X/IP65

Elec. Connection: Micro-DC, 4 pin male

Output Type F3X0 = PNP pulse with frequency divider

Power Requirement: 24 VDC $\pm 20\%$ @ 10 mA Max.

Output: PNP Open Collector

Max. Output Load: 25 mA

Elec. Protection: NEMA 4X/IP65

Elec. Connection: Micro-DC, 4 pin male

Output Type L303, L343 = (0)4-20 mA

Power Requirement: 24 VDC $\pm 20\%$ @ 10 mA Max.

Output: 3-wire 0-20 mA or 4-20 mA depending on model code

Max. Output Load: 500 ohms

Elec. Protection: NEMA 4X/IP65

Elec. Connection: Micro-DC, 4 pin male

Output Type C30M, C30R, C34N, C34P compact electronics

Housing Material: 303 stainless steel

Power Supply: 24 VDC $\pm 20\%$

Display: 3 digit LED

Output Types: Analog output +1 switch or 2 switches based on model code

Analog Output: 4-20 mA, 3-wire Rloop < 500 ohms

Switch: PNP or NPN open collector, 300 mA max.

Elec. Protection: NEMA 4X/IP65

Elec. Connection: Micro-DC, 5 pin male

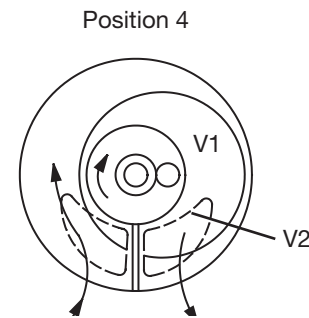
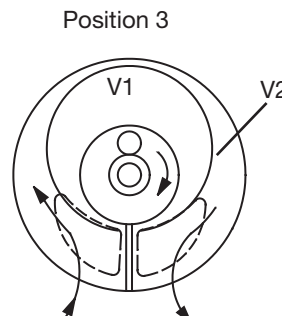
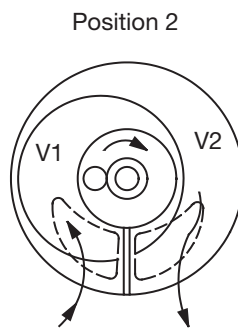
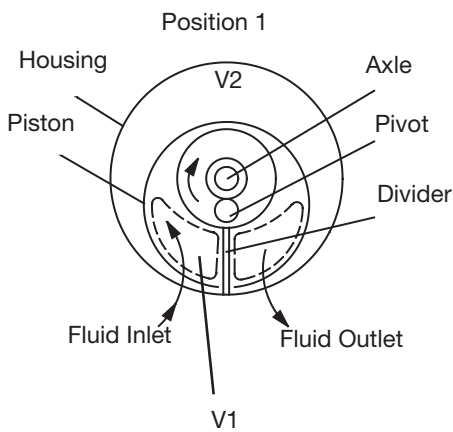
DRZ Principle of Operation

1. Liquid enters the meter through the inlet port. Liquid momentum causes the internal piston to rotate about its cammed axle.
2. As the piston rotates, a known volume fills the meter cavity V2.
3. The liquid volume is sealed inside the meter cavity by the piston and a partition which separates the inlet port from the outlet port.

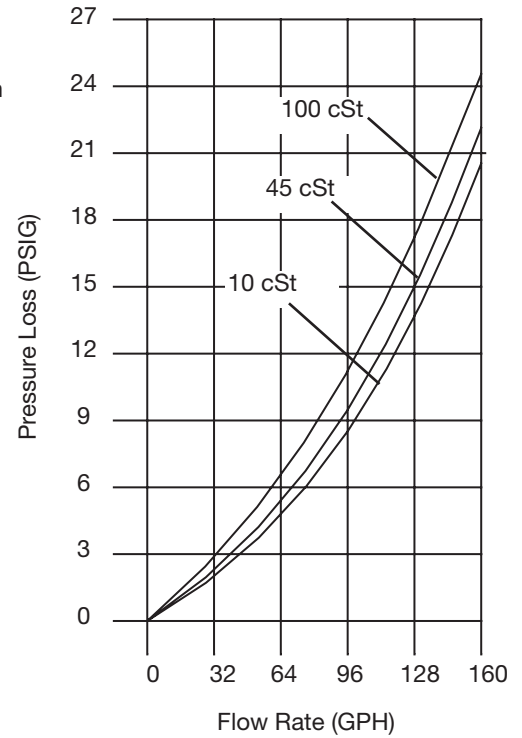
4. When the piston rotates past the outlet port, the known liquid volume V2 exits the meter. The piston rotation is detected by a Hall effect sensor and an output pulse is generated.

Each pulse correlates to a precisely measured volume for liquid flow. Unlike other piston type meters, the DRZ piston rotates in an orbital fashion which minimizes flow pulsations.

Operating Principle



DRZ dp vs. Flowrate



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Order Numbers for Standard Types

Measuring Range	Fittings	Output Type
6-420 LPH = DRZ-1110...	...N1... = 1/8" NPT	...0000 = OEM NPN pulse
1.6-110 GPH = DRZ-1120...	...N2... = 1/4" NPT	...F300 = PNP pulse
	...G1... = 1/8" BSP	...F320 = PNP pulse, 1:2 Freq. divider
	...G2... = 1/4" BSP	...F340 = PNP pulse, 1:4 Freq. divider
		...F390 = PNP pulse, custom Freq. divider
		...L303 = 0-20 mA, 3-wire micro-DC plug
		...L343 = 4-20 mA, 3-wire, micro-DC plug
		...C30M = LED display w/ 2 NPN switches, micro-DC plug
		...C30P = LED display w/ 2 PNP switches, micro-DC plug
		...C34N = LED display w/ 4-20 mA + 1 NPN switch micro-DC plug
		...C34P = LED display w/ 4-20 mA + 1 PNP switch micro-DC plug

Accessories

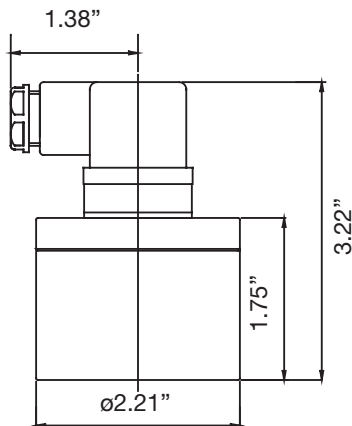
Part Number 807.037 = Mating 4-pin micro-DC plug with 6 feet of cable for output type F300, 320, 340, 390, L303 and L343

Part Number 807.007 = Mating 5-pin micro-DC plug with 6 feet of cable for output type C30M, 30P, 34N and C34P

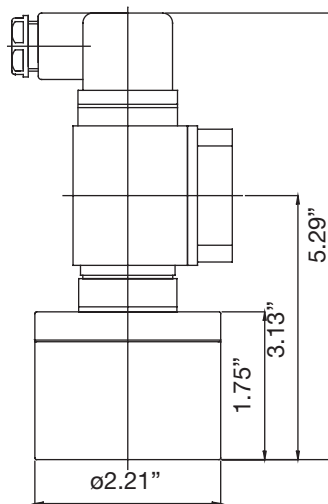
Part Number AUF-4000 = Snap-on display, pulse input to 2-wire 4-20 mA for output type 0000

Example DRZ model number: DRZ-1120N2C34P

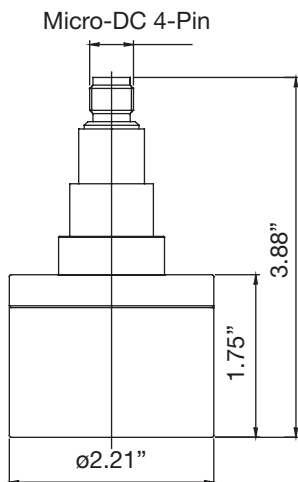
DRZ with Output Type 0000 (OEM Pulse)



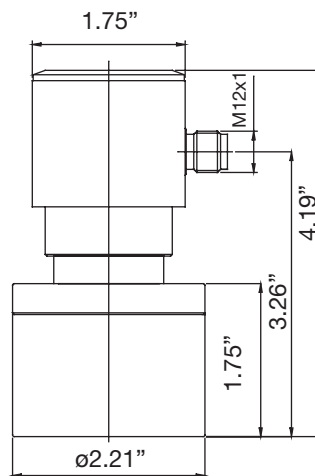
DRZ with Output Type 0000 and AUF-4000



DRZ with Output Type F3xx or L3xx



DRZ with Output Type C3xx



DRZ Bottom View

